

**Enhancing San Francisco's Neighborhoods: A Proposed Street Tree Action Plan** MAY - 4 2006

San Francisco Urban Forest Council

November 10, 2004

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The San Francisco Urban Forest Council is currently developing the Urban Forest Plan, a comprehensive guide for the management of the trees in San Francisco's parks, backyards, open spaces, streets and elsewhere. The following proposed Four Step **Street Tree Action Plan** focuses on the City's street trees in the public right-of-way and will be a component of the larger comprehensive plan.

Early findings have shown that San Francisco's roughly 99,000 street trees provide about \$ 7.5 million dollars in environmental and economic benefits each year including reduced storm water runoff and improved air quality, as well as the more incalculable benefits to the community such as reduced crime, and a heightened sense of community pride.

While 99,000 trees may seem like plenty, more than twice as many trees (127,500) could be planted in empty sites throughout San Francisco. Moreover, many of San Francisco's existing street trees suffer from improper placement, are unsightly and even hazardous. (For more background information, see the City's 2004 **State of the Urban Forest** Report to the Mayor and Board of

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San Francisco has a chance to beautify its neighborhoods and improve the health of its residents with more and healthier street trees. With this goal, the following proposal outlines the existing street trees and promote the planting of new trees. This plan ensures San Francisco maximizes the benefits from its existing street trees and ensures the safety of all San Franciscans.

The estimated cost for tree planting and maintenance is \$ 3.7 Million and this proposal includes an additional \$1.7 million in the first year to an average of \$ 21 million per year thereafter.

1. Establish guidelines for pruning and other maintenance, planting, and removal activities for all City agencies and property owners responsible for street trees.

Provide education for both homeowners and City crews on the importance of maintaining and increasing enforcement of Article 16 of the Public Utilities Commission's penalties for injuring street trees.

Plant 5,000 new trees annually and provide dedicated maintenance for existing DPW-maintained trees from 7 years to 3 years.

1. Establish guidelines for pruning and other maintenance, planting, and removal activities for all City agencies and property owners responsible for street trees.

Establishing City agencies as leaders in the maintenance of public trees is the critical first step in protecting San Francisco's street trees and sets an example for private property owners to follow. While Recreation and Parks and Public Works departments are responsible for most publicly managed trees, the Public Utilities Commission, SF Unified School District and 13 other agencies are also responsible for tree maintenance. Among these agencies, a wide disparity of commitment and practices exist.

To ensure that street trees are properly maintained across agencies and by other responsible property owners, the American National Standard Institute (ANSI) standards and Best Management Practices (i.e. ANSI A300) should be adopted, including standard specifications for purchase, installation and early care

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Early findings have shown that San Francisco's roughly 99,000 street trees provide about \$ 7.5 million dollars in environmental and economic benefits each year including reduced storm water runoff and improved air quality, as well as the more incalculable benefits to the community such as reduced crime, and a heightened sense of community pride.

While 99,000 trees may seem like plenty, more than twice as many trees (127,500) could be planted in empty sites throughout San Francisco. Moreover, many of San Francisco's existing street trees suffer from improper care or neglect causing them to become unsightly and even hazardous. (For more background information, refer to the attached Urban Forest Council's 2004 **State of the Urban Forest** Report to the Mayor and Board of Supervisors)

The good news is that San Francisco has a chance to beautify its neighborhoods and improve the environmental quality of communities with more and healthier street trees. With this goal, the following proposal outlines Four Steps that will both protect the existing street trees and promote the planting of new trees. This proposed Plan will ensure that San Francisco maximizes the benefits from its existing street trees and ensures a green canopy exists for future San Franciscans.

San Francisco's current annual budget for tree planting and maintenance is \$ 3.7 Million and this proposal seeks to increase that amount from an additional \$1.7 million in the first year to an average of \$ 21 million per year over the next twenty years.

Action Steps (in priority order)

- 1. Establish guidelines for pruning and other maintenance, planting, and removal activities for all City agencies and property owners responsible for street trees.**
- 2. With guidelines in place, increase education for both homeowners and City crews on proper tree care while simultaneously increasing enforcement of Article 16 of the Public Works Code, which specifies penalties for injuring street trees.**
- 3. Increase the planting of new trees to 5,000 annually and provide dedicated maintenance**
- 4. Reduce maintenance cycle of existing DPW-maintained trees from 7 years to 3 years.**

- 1. Establish guidelines for pruning and other maintenance, planting, and removal activities for all City agencies and property owners responsible for street trees.**

Establishing City agencies as leaders in the maintenance of public trees is the critical first step in protecting San Francisco's street trees and sets an example for private property owners to follow. While Recreation and Parks and Public Works departments are responsible for most publicly managed trees, the Public Utilities Commission, SF Unified School District and 13 other agencies are also responsible for tree maintenance. Among these agencies, a wide disparity of commitment and practices exist.

To ensure that street trees are properly maintained across agencies and by other responsible property owners, all tree-related American National Standard Institute (ANSI) standards and Best Management Practices (i.e. ANSI Z133, A300) should be adopted, including standard specifications for purchase, installation and early care of new trees.

Timeline: Adopt guidelines by January 2005.

2. With guidelines in place, increase education for both homeowners and City crews on proper tree care while simultaneously increasing enforcement of Article 16 of the Public Works Code, which specifies penalties for injuring street trees.

With the above guidelines in place, DPW (with the assistance of the Urban Forest Council and Department of the Environment) will undertake a comprehensive **public education** effort to inform both residents and city crews about proper tree care. Strategies will include, but not be limited to, local and citywide media, workshops, and brochures.

Based on the poor condition of many street trees, Article 16 of the Public Works Code, which assigns responsibility for maintenance and prohibits injury to street trees, appears to be largely unheeded. This is partly due to the lack of available staff to enforce the code and a constituency uninformed regarding proper tree maintenance practices.

Concurrent with the adoption of pruning and maintenance standards, DPW can **increase enforcement** of Article 16 by hiring (2) dedicated Environmental Control Officers. These positions do not appear in the funding chart below and would be self-funding by the revenue generated in fines for violation of the code. Moreover, additional revenue from enforcement could be used for new planting.

Below is a conservative breakdown taken from DPW estimates of currently reported code violations:

10 reported enforceable violations per week (x) 52 weeks = 520 calls
\$560 per violation (x) 520 = **\$291,200**

\$291,200 - \$236,760 labor (2 positions includes all overhead) = **\$ 54,440 for tree planting.**

A system will be developed to report incidents and improper maintenance by City crews. The Urban Forest Council is also considering a related proposal to require revocable permits for all *contracted* tree workers who maintain trees in the public right-of-way. In this way, enforcement may include fines and ultimately the revocation of licenses for tree contractors who repeatedly violate Article 16.

Timeline: Increase enforcement and education by July 2005

3. Increase the number of new tree plantings from 1,100 to 5,000 annually

San Francisco has an estimated 99,000 street trees. While this may seem like a large number, there are actually 127,500 additional empty tree planting sites in San Francisco. This means that only 45% of the sites on sidewalks where trees could grow are actually planted. Moreover, economically disadvantaged neighborhoods such as those in Districts 10 and 11 have the fewest street trees – only 26% of sites planted.

To increase the planting level to a respectable 85%, the City must commit to planting **and** maintaining¹ 3,900 new trees a year, in addition to the 1,100 currently planted annually, for the next 20 years. Community-based non-profit tree planting organizations, such as Friends of the Urban Forest, are well suited to planting street trees with community assistance and providing maintenance for the first five years (a total of 4 visits is ideal over this period). DPW is better suited to maintaining all trees over five years of age.

Under this proposed scenario, the non-profit tree-planting sector will increase its planting by 3,900 trees for approximately **\$ 1.7 million per year** and can perform 4 maintenance visits (during the tree's first 5 years) for an additional **\$ 600,000 per year**. This is an increased total of \$2.3 million needed to fund non-profit efforts.

After the first five years, DPW can maintain these additional 3,900 trees (on a three year cycle—currently trees are maintained on a 7-year cycle, see Step 4 below) for approximately **\$ 750,000 per year**. This cost would not

¹ **No tree should be planted in San Francisco without a long-term plan and a commitment of funds for maintenance over its entire life. All too often cities have invested time and money into planting large numbers of new trees only to lose them through lack of maintenance. This proposal considers the cost of initial planting as inseparable from this long-term upkeep.**

kick in for the first 5 years of this plan, but would then increase each year by \$.75 million (as new trees are continually added). See below for approximate breakdown of costs over 20 years.²

Additional cost per year (in Millions)³

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
New trees	3,900	7,800	11,700	15,600	19,500	24,400	28,300	32,200	36,100	40,000	43,900	47,800	51,700	54,600	58,500	62,400	66,300	70,200	74,100	78,000
Planting Costs	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Establishment Costs (0 - 5 years)	0	0.2	.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Beyond 5 years - 3 year cycle (DPW)	0	0	0	0	0	.75	1.5	2.25	3	3.75	4.5	5.25	6	6.75	7.5	8.25	9	9.75	10.5	11.25
Total Annual Cost	1.7	1.9	2.1	2.3	2.3	3.05	3.8	4.55	5.3	6.05	6.8	7.55	8.3	9.05	9.8	10.55	11.3	12.05	12.8	13.55

As the City adds 3,900 new trees per year, the cost of maintenance will increase each year until a stocking level of 85% is reached at which point it will level off.⁴

Because a significant obstacle to new tree planting is securing property owner commitment for ongoing maintenance throughout the tree's life, the increased tree planting effort should be focused on blocks where DPW already provides maintenance, on blocks not currently maintained by DPW but which would create linkages with the network of City-maintained trees, and within neighborhoods where tree numbers are low, such as in Districts 4, 10, and 11. In all of these cases, priority for new planting should focus on sites where an empty tree basin exists and where the tree has been removed (whether legally or illegally).

Timeline: Implement increased planting and maintenance by January 2006

4. Reduce the maintenance cycle from 7 years to 3 years for every existing street tree through a Centralized Street Tree Maintenance Program

The target street tree maintenance cycle is to visit each tree on average once every three years. This level of maintenance is optimal for ensuring tree health and limiting conflicts with signage, views, above and below ground infrastructure, buildings and traffic. A three-year cycle will also limit liability costs from tree failure and lifted sidewalks. An average five-year maintenance cycle is also acceptable, but may result in greater costs from increased occurrence of the conflicts previously listed.

Through a multi-year process, the Department of Public Works should first move from service-driven-by--response to requests-and-emergencies to a preventative three-year maintenance cycle for trees currently maintained by DPW. Next, all street trees adjacent to other city agencies' properties and then private properties should be phased into the program. Annually, about \$ **13.5 million** dollars will be required in addition to the current funding for street trees.

Additional funding to increase DPW maintained trees from 7 to 3 year cycle.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Trees	30,000	40,000	50,000	60,000	70,000	80,000	90,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000	99,000
Annual Cost	2.8	1.93	3.85	5.79	7.92	9.65	11.58	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5

² Dedicated care in the first 5 years (the establishment period) will likely save the City money in the long-term by avoiding costly pruning of mature trees. Long-term maintenance cost estimates are based on current practice and do not take into account the potential long-term savings that result from a vigorous young tree care program.

³ These figures are approximate and are above and beyond current urban forestry expenditures

⁴ This proposal does not consider in tree mortality and attrition due to old age and/or negligence. A more detailed proposal will include our best estimates of mortality, recognizing that an increased maintenance program will likely improve the current scenario (For current mortality, please refer to State of the Urban Forest Report).



Timeline: *Implement shortened maintenance cycle by January 2006*

Total 20 Year Project Cost: Step 3 = 135 Million
Step 4 = 219 Million
\$354 Million = or \$ 17.7 Million/Year
Current Annual Budget 3.7 Million/Year
Total Proposed Budget for Street Tree Planting and Maintenance \$ 21.4 Million/Year

